

**REMARKS**

With the foregoing amendments, claims 1-20 are pending in the application. Favorable consideration is requested.

In response to the objection to the Abstract, the originally filed Abstract has now been deleted and replaced by the attached substitute Abstract, which has been amended in line with the helpful comments of the Examiner. No new matter has been added.

Claims 1-20 stand rejected as allegedly anticipated by Ionescu (XP-001153333), and Krauss (U.S. Patent 6422077 B1). Applicants respectfully traverse the rejection.

Ionescu (XP-001153333) is a disclosure of March 18-21, 2002, by the inventor himself that is dated less than one year before the international filing date of the subject application (September 6, 2002) and the priority date (March 20, 2002). As a result, it does not constitute prior art under Section 102(b).

Krauss (U.S. Patent 6422077 B1) does not anticipate the claimed invention for at least the following reasons. First, the claimed layer that is qualified as a sacrificial layer is made of a different material than the Krauss material. More specifically, the claimed layer is made of Si, In contrast, Krauss's layer is made of SiO<sub>2</sub>. See column 4, last paragraph and column 5, second paragraph of Krauss. This difference alone is sufficient to rebut the anticipatory rejection.

Second, in order to avoid any improper obviousness rejection (based upon any assertions concerning the effective teachings of Krauss), applicants note that Krauss allegedly teaches the use of SiO<sub>2</sub> as a sacrificial layer that is removed by etching in HF (see column 5, lines 31-32). However, the Si in the claimed invention is not affected by HF. Thus, Krauss's use of SiO<sub>2</sub> does not teach the use of Si because to do so would be contrary to the teachings of Krauss and would defeat Krauss's objectives.

In this regard, in the present application, the applicants have discovered how to obtain a metallic suspended structure with a Si sacrificial layer that is eliminated by dry etching with a fluorine based chemistry. In the claimed invention, it is not possible to use the teaching of Krauss, i.e., one cannot use SiO<sub>2</sub> with a wet etching process to produce suspended metallic structures because the HF acid will dissolve the metal as well. This is not the case with the fluorine based chemistry in the present invention, which preserves the metal.

Accordingly, the Krauss process is unsuitable to produce metallic MEMS as in the present invention and even teaches away from the claimed invention. Simply stated, the claimed process allows the creation of suspended metallic structures, and this process is not disclosed or taught by Krauss.

A third and further difference relates to the dry etching process. By using such a process, the structure will never be glued to the substrate after etching, this being the case when using a wet process without special options such as critical point CO<sub>2</sub> drying, as in Krauss. Moreover, the claimed process allows the fabrication of suspended metal structures above the gate oxide of a MOS transistor (CMOS compatible) with various applications (as per some of the invention claims), which is neither possible nor taught by Krauss.

In view of the foregoing facts and reasoning, applicant requests the withdrawal of the prior art rejection.

Applicant submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

If the Examiner has any questions, the undersigned may be contacted at 703-816-4009.

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Respectfully submitted,

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## **Abstract**

A process for manufacturing a Micro-Electro-Mechanical-System (MEMS) comprises the use of a sacrificial layer, wherein the sacrificial layer is made of silicon. MEMS devices such as SG-MOSEFT, MEMS switches or MEMS tunable capacitors may be obtained according to the process.